

# Relationship quality in lesbian and heterosexual couples undergoing treatment with assisted reproduction

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**BACKGROUND:** One of the major factors impacting on a couple's relationship is the desire to have children. To many couples having a child is a confirmation of their love and relationship and a means to deepen and develop their intimate relationship. At the same time parental stress can impact on relationship quality. Relationship quality in lesbian couples is, currently, sparsely studied. The aim of the present study was to compare lesbian and heterosexual couples' perceptions of their relationship quality at the commencement of assisted reproduction, and to relate this to background data such as educational level, having previous children and, for lesbian couples, the use of a known versus anonymous donor.

**METHODS:** The present study is part of the prospective longitudinal 'Swedish study on gamete donation', including all fertility clinics performing donation treatment in Sweden. Of a consecutive cohort of 214 lesbian couples about to receive donor insemination and 212 heterosexual couples starting regular IVF treatment, 166 lesbian couples (78% response) and 151 heterosexual couples (71% response) accepted participation in the study. At commencement of assisted reproduction participants individually completed questionnaires including the instrument 'ENRICH', which is a standardized measure concerning relationship quality.

**RESULTS:** In general, the couples rated their relationship quality as good, the lesbian couple better than the heterosexuals. In addition, the lesbian women with previous children assessed their relationship quality lower than did the lesbian woman without previous children. For heterosexual couples previous children did not influence their relationship quality. Higher educational levels reduced the satisfaction with the sexual relationship ( $P = 0.04$ ) for treated lesbian women, and enhanced the rating of conflict resolution for treated lesbian women ( $P = 0.03$ ) and their partners ( $P = 0.02$ ). Heterosexual women with high levels of education expressed more satisfaction with communication in their relationship ( $P = 0.02$ ) than did heterosexual women with lower educational levels.

**CONCLUSIONS:** In this Swedish study sample of lesbian and heterosexual couples' relationships, we found that they were generally well adjusted and stable in their relationships when starting treatment with donated sperm or IVF, respectively. However, where lesbian women had children from a previous relationship, it decreased relationship quality. For the heterosexual couples previous children did not affect relationship quality.

**Key words:** relationship / sperm donation / lesbian

## Introduction

Many issues influence the quality of romantic relationships. However, one of the major factors impacting on a couple's relationship is the desire to have children (Riskind and Patterson, 2010). To many couples having a child is a confirmation of their love and relationship and through the forming of a family and parenthood couples intend to

deepen and develop their intimate relationship (Drosdzol and Skrzypulec, 2009). At the same time, studies have shown that the stresses of parenting negatively impact on relationship quality and spill over to the marital happiness of heterosexual couples (Kurdek, 2008). Kurdek (2008) studied changes in relationship quality in 313 couples living without children: lesbian ( $n = 95$ ), gay ( $n = 92$ ) and heterosexual ( $n = 226$ ), and in partners from 312 heterosexual couples living with

children, over the first 10 years of cohabiting. A well-established and validated instrument, the 32-item Dyadic Adjustment Scale by Spanier (1979), was used for assessment. The study reported a good and stable relationship development for lesbian couples as well as for male gay couples, whereas a decline in relationship quality appeared within the two groups of heterosexual couples—heterosexual couples living with children showed the largest change in relationship quality. This decline had an early phase of acceleration followed by a second phase of accelerated decline. The heterosexual couples living without children also showed an initial phase of decline in relationship quality but then this levelled off. Lesbian and gay couples with children were not studied (Kurdek, 2008; Drosdzol and Skrzypulec, 2009).

Couples going through IVF have been described as being generally well-adjusted and stable in their relationships and psychological well-being (Sydsjö et al., 2002). In a long-term follow-up study, which looked at relationship and parenthood within IVF-couples with children, the hypothesized negative impact of infertility on the couples' appreciation of their relationship and parenthood was not confirmed (Sydsjö et al., 2005).

Drosdzol and Skrzypulec (2009) studied marital and sexual interactions in infertile couples and found that diagnosed male infertility with duration of 3–6 years was connected with the highest level of relationship instability and the lowest sexual satisfaction in both infertile females and males. Other risk factors of marital dissatisfaction were higher age (over 30 years) and lower education level among infertile couples. Sydsjö et al. (2005), however, did not find higher age as a risk factor, rather the opposite. Instead, longer relationship duration and higher educational level seemed to protect against marital dissatisfaction. Moreover, a systematic review investigating the quality of life in infertile couples, found evidence of more negative influence of infertility in infertile women than in infertile men (Chachamovich et al., 2010).

Although previous studies have been conducted on the quality of couple relationships and psychological factors of childlessness, satisfaction and quality in lesbian relationships are, according to a review in 2006, sparsely studied (Peplau and Fingerhut, 2006). Irrespective of sexual orientation, men and women do have similar desires to have children and to experience parenthood (Riskind and Patterson, 2010).

Contrary to what Kurdek (2008) found, previous data from Norway and Sweden, where registered same-sex partnerships have been available since the 1990s, indicate that the rate of partnership dissolution within 5 years of entering a legal union is higher among same-sex partnerships than among heterosexual marriages, with lesbian couples having the highest rates of dissolution (Andersson et al., 2006).

From the first of July 2005, lesbian couples, cohabiting or in registered partnerships, have had access to a free national health service which provides assisted reproduction in Swedish hospitals, a possibility that was previously only available to heterosexual couples (SOFSS 2005: 17). The Swedish legislation requires that all couples initiate the assisted reproductive technique with a basic medical and psychosocial investigation. For the lesbian woman the basic medical examination, besides the standard infection screening, will include a tubal-flush which will reveal a blocked Fallopian tube and decide if the treatment will be an 'In Vitro Fertilization' or 'Insemination with Donated Sperm'. The psychosocial investigation aims to assess the

stability and psychological health of the relationship. Psychiatric illness or alcohol or/and drug addiction can be a cause of refusal of assisted reproductive treatment (ART).

The aim of the present study was 2-fold. First, to compare lesbian and heterosexual couples' perceptions of their relationship at the commencement of ART, secondly, to relate relationship quality to background data such as educational level, having previous children and, for lesbian couples, the use of a known versus anonymous donor.

## Materials and Methods

### Sample and procedure

The Swedish multicenter study on gamete donation is a prospective longitudinal study of donors and recipients of donated gametes and includes a comparison group of heterosexual couples having ART with their own gametes. The multicenter study comprises all seven infertility clinics performing gamete donation in Sweden, at the University hospitals in Stockholm, Gothenburg, Uppsala, Umeå, Linköping, Örebro and Malmö. During the period 2005–2008 consecutive samples of recipient couples starting donation treatment were approached regarding participation.

This study presents data from lesbian couples using donor sperm to conceive, compared with heterosexual couples undergoing IVF; both groups of couples were at the start of ART.

The rationale for choosing heterosexual couples as a control group is that the lesbian couples represent in terms of family construction a minority group, which we know very little about. Both lesbian and heterosexual couples were seeking ART due to a strong desire to have a child and to establish a family. Because of the minority/majority relationship between the couples we believe that heterosexual couples are a suitable control group according to the aims of the study.

Exclusion criteria: persons who did not speak and/or read Swedish.

### Lesbian couples starting treatment with donated sperm

A total of 214 lesbian couples (428 individuals) that started treatment with sperm donation were approached to participate in the study, 166 couples accepted participation and individually completed a questionnaire at the start of treatment. In two couples, only one partner chose to participate, resulting in a total of 332 participants (78% response). Reasons for non-participation were: did not want to participate ( $n = 54$ ), treatment discontinuation ( $n = 34$ ) or not stated ( $n = 8$ ).

### Heterosexual couples starting IVF treatment with own gametes

A total of 212 heterosexual couples (424 individuals) starting assisted reproduction (with own gametes) at four of the participating infertility clinics were approached for study participation during the same time period (2005–2008). Of the eligible sample, 151 heterosexual couples accepted participation and individually completed a questionnaire at the start of treatment. In seven couples, only one partner chose to participate, resulting in a total of 302 participants (71% response). Reasons for non-participation were: did not want to participate ( $n = 72$ ), treatment discontinuation ( $n = 42$ ) or not stated ( $n = 8$ ).

Participants were asked to complete the questionnaire individually. The questionnaire was handed out at the infertility clinic and the couples were placed so they could answer the questionnaire separated from each other. The questionnaire was distributed together with a cover letter stating the purpose of the study and a guarantee of confidentiality.

## Data collection

### Measures

The ENRICH instrument assesses perceptions of partner relationship in 10 categories comprising 10 items each. ENRICH subscales have shown an internal consistency ( $\alpha$ , range: 0.69–0.97) and test–retest reliability (range: 0.65–0.94) as well as content and construct validity (Fournier *et al.*, 1983). The discrimination and concurrent validity of these scales have been established by Fowers and Olson (1989). The Swedish version of the inventory has been evaluated (Wadsby, 1998), and the reliability and the validity of the instrument have been established to be satisfactory.

The scales are briefly described as follows:

- (i) Personality issues: Examines an individual's satisfaction with his or her partner's behaviours.
- (ii) Communication: Is concerned with an individual's feelings and attitudes towards communication in the relationship. Items focus on the level of comfort felt by the respondent in sharing and receiving emotional and cognitive information from the partner.
- (iii) Conflict resolution: Assesses the partner's perception of the existence and resolution of conflict in the relationship. Items focus on how openly issues are recognized and resolved, as well as the strategies used to end arguments.
- (iv) Financial management: Focuses on the attitudes and concerns about the way economic issues are managed within the marriage/relationship. Items assess spending patterns and the manner in which financial decisions are made.
- (v) Leisure activities: Assesses preferences for spending free time. Items reflect social versus personal activities, shared versus individual preferences and expectations about spending leisure time as a couple.
- (vi) Sexual relationship: Examines the partner's feelings about the affection and sexual relationship. Items reflect attitudes about sexual issues, sexual behaviour and sexual fidelity.
- (vii) Children and parenting: Assesses attitudes and feelings about having and raising children. Items focus on decisions regarding discipline, goals for the children, and the impact of children in the couple's relationship.
- (viii) Family and friends: Assesses feelings and concerns about relationships with relatives, in-laws and friends. Items reflect expectations for and comfort with spending time with family and friends.
- (ix) Egalitarian roles: Focuses on an individual's feelings and attitudes about various marital and family roles. Items reflect occupational, household, sex and parental roles. High scores indicate a preference for more egalitarian roles.
- (x) Conception of life: Examines the meaning of values, religious beliefs and practice and conception of life within the marriage/relationship.

Each subscale score can vary between 10 and 50 points, 50 points being the most positive outcome. There are six alternatives for each item ranging from 'in total agreement' to 'do not agree at all'. Summed, the subscale scores provide a global assessment of marital satisfaction varying between 100 and 500 points. The ENRICH inventory also includes a Positive Couples Agreement (PCA) score which is a measure of the couple's consensus for each of the 10 relationship areas. The partners' responses are combined and the items that they agree on (within 1 point on a 1–5 scale) are summed and converted to a percentage score, which could range from 0 to 100%. PCA includes only those items where both see the issue as positive.

## Demographic and medical data

The following demographic data are collected in the questionnaires: age, highest education, civil status, number of children, type of donation (anonymous/known) and number of donations/treatments.

### Ethics

The study was approved by The Regional Ethical Review Board in Linköping.

### Statistics

Although ENRICH data are slightly skewed, we have chosen to approximate all statistical tests with the normal distribution on the basis of the central limit theorem. In testing for group differences ordinary two-sided *t*-tests have been used. Multiple linear regression as well as MANOVA was used to investigate what impact previous children, educational level and known donation had on the Enrich and PCA scores (each sub-scale modelled separately). All statistical tests performed were two-sided with  $P < 0.05$  considered as statistically significant.

## Results

### Demographic data

Demographics of the study population are displayed in Table I. The treated lesbian women were younger than their accompanying partners ( $P < 0.001$ ), and they also had fewer biological children than their partners. There was also an age difference in the heterosexual couples ( $P < 0.001$ ).

Further, there were no differences between the two groups regarding the number of previous children; in the lesbian couple 16.5 and 13.9% of the heterosexual couples had children before the treatment.

As a whole the study group was well educated. Fifty per cent or more than of all female groups and 39.7% of men had a university degree (Table I).

In the lesbian couple, 4.8% ( $n = 8$ ) stated they knew the sperm donor.

### Relationship in lesbian and heterosexual couples at start of treatment

Relationship quality data were collected with the Enrich inventory and we found several differences between the groups in the couples' assessment of their relationship quality as well as within the couples' themselves (treated and accompanying partner).

Tables II and III display the Enrich scores of each individual.

In general, the couples rated their relationship quality as high, the lesbians higher than the heterosexual couples. The greatest difference occurred when comparing the accompanying lesbian partner with the accompanying heterosexual partner: In 8 of 10 subscales the lesbian partner scored significantly higher than did the accompanying husband (Table II). Comparing the two groups of treated women, lesbians scored higher than heterosexual women in the three subscales—Egalitarian roles ( $P \leq 0.001$ ), Communication ( $P = 0.009$ ) and Conflict resolution ( $P = 0.003$ ) (Table III).

The multivariate analyses (data not shown), with ENRICH scores as dependent variables, and previous children (children or no children), educational level (university or other) and group as independent variables, revealed that the treated lesbian women with previous children assessed their relationship quality lower than did the lesbian women

**Table I** Demographic data of lesbian and heterosexual couples; age, level of education, known donor and previous children (number (%) unless stated).

|                           | Woman starting treatment |                        | Partner (no treatment) |                        |
|---------------------------|--------------------------|------------------------|------------------------|------------------------|
|                           | Lesbian (n = 166)        | Heterosexual (n = 151) | Lesbian (n = 166)      | Heterosexual (n = 151) |
| Age (year; Mean $\pm$ SD) | 32.14 $\pm$ 3.98         | 32.29 $\pm$ 4.04       | 33.57 $\pm$ 6.12       | 34.60 $\pm$ 5.94       |
| Educational level         |                          |                        |                        |                        |
| Primary school            | 7 (4.2)                  | 2 (1.6)                | 5 (3.0)                | 11 (8.7)               |
| High school               | 47 (28.3)                | 48 (38.1)              | 77 (46.7)              | 65 (51.6)              |
| University                | 112 (67.5)               | 76 (60.3)              | 83 (50.3)              | 50 (39.7)              |
| Known donor               | 8 (4.8)                  |                        | 8 (4.8)                |                        |
| Previous children         |                          |                        |                        |                        |
| Biological                | 5 (3.0)                  | 17 (11.3)              | 27 (16.3)              | 12 (7.9)               |
| Adoptive                  | 6 (3.6)                  | 1 (0.7)                | 0                      | 0                      |
| Step                      | 15 (9.0)                 | 3 (2.0)                | 2 (1.2)                | 9 (6.0)                |

**Table II** Category scores from the ENRICH assessment of relationship quality for the untreated partner prior to treatment.

|                        | Heterosexual partner (n = 151) |       | Lesbian partner (n = 166) |       | P-value* |
|------------------------|--------------------------------|-------|---------------------------|-------|----------|
|                        | Mean                           | SD    | Mean                      | SD    |          |
| Personality issues     | 41.7                           | 5.29  | 44.0                      | 4.13  | <0.001   |
| Sexual relationship    | 43.0                           | 3.60  | 43.6                      | 3.00  | 0.122    |
| Children and parenting | 43.8                           | 3.38  | 44.0                      | 2.89  | 0.535    |
| Family and friends     | 43.3                           | 4.99  | 44.8                      | 4.12  | 0.004    |
| Egalitarian roles      | 41.2                           | 3.57  | 42.5                      | 2.80  | <0.001   |
| Conception of life     | 39.1                           | 3.88  | 40.6                      | 2.85  | <0.001   |
| Communication          | 42.8                           | 5.07  | 45.3                      | 4.18  | <0.001   |
| Conflict resolution    | 37.1                           | 7.33  | 41.7                      | 4.83  | 0.004    |
| Financial Management   | 42.1                           | 4.66  | 43.5                      | 4.95  | 0.015    |
| Leisure activities     | 37.9                           | 5.75  | 42.0                      | 4.13  | <0.001   |
| Total score            | 414.7                          | 34.01 | 432.5                     | 23.99 | <0.001   |

\*P-value from t-test comparing scores between heterosexual and lesbian partners.

without previous children ( $P = 0.008$ ). The effects of previous children were found in relationship dimensions such as Sexual Relationship ( $P = 0.046$ ), Egalitarian Roles ( $P = 0.002$ ), Family and Friends ( $P = 0.040$ ), Communication ( $P = 0.047$ ) and Conflict Resolution ( $P = 0.032$ ).

Partners of treated lesbian women with previous children did also experience lower relationship quality in the dimensions—Family and Friends ( $P = 0.005$ ), Egalitarian Roles ( $P = 0.018$ ), Conception of life ( $P = 0.023$ ), Communication ( $P = 0.005$ ), Conflict Resolution ( $P = 0.013$ ) and Leisure ( $P = 0.036$ ). For the heterosexual couples having previous children did not have any effect on their opinion and assessment of their relationship.

Educational level affected the assessment in some of the subscales. The treated lesbian women with high education levels rated their

satisfaction with their sexual relationship lower than did treated lesbian women with lower level of education ( $P = 0.045$ ), whereas both treated lesbian women ( $P = 0.033$ ) and lesbian partners ( $P = 0.021$ ) with higher education experienced and expressed better conflict resolution in the relationship, than did those with lower educational levels. In the heterosexual couples, women with high education levels expressed more satisfaction with their communication in the relationship ( $P = 0.022$ ).

Among lesbian individuals, using a known donor did not affect the assessment of relationship quality.

The MANOVA presented similar results with the addition of a significant group difference between the heterosexual couples and the lesbian couples for all subscales ( $P < 0.05$  for all scales).

**Table III** Category scores from the ENRICH assessment of relationship quality for the treated woman prior to treatment.

|                        | Heterosexual woman<br>( <i>n</i> = 151) |       | Lesbian woman ( <i>n</i> = 166) |       | P-value* |
|------------------------|---|-------|---------------------------------|-------|----------|
|                        | Mean                                    | SD    | Mean                            | SD    |          |
| Personality issues     | 43.4                                    | 4.70  | 44.2                            | 4.04  | 0.133    |
| Sexual relationship    | 43.1                                    | 3.32  | 43.8                            | 2.89  | 0.730    |
| Children and parenting | 43.9                                    | 3.89  | 44.3                            | 2.84  | 0.256    |
| Family and friends     | 44.5                                    | 3.94  | 45.2                            | 3.74  | 0.110    |
| Egalitarian roles      | 40.4                                    | 3.52  | 42.7                            | 3.07  | <0.001   |
| Conception of life     | 39.9                                    | 3.66  | 40.0                            | 2.95  | 0.705    |
| Communication          | 43.5                                    | 4.91  | 44.9                            | 4.47  | 0.009    |
| Conflict resolution    | 40.5                                    | 5.23  | 42.2                            | 4.89  | 0.003    |
| Financial Management   | 42.8                                    | 4.08  | 43.6                            | 4.17  | 0.080    |
| Leisure activities     | 40.7                                    | 4.82  | 41.7                            | 4.65  | 0.078    |
| Total score            | 421.6                                   | 27.87 | 432.4                           | 25.79 | <0.001   |

\*P-value from t-test comparing scores between heterosexual and lesbian woman.

**Table IV** PCA scores for heterosexual and lesbian couples prior to treatment.

|                        | Heterosexual couples<br>( <i>n</i> = 151) |       | Lesbian couples ( <i>n</i> = 166) |       | P-value* |
|------------------------|---|-------|-----------------------------------|-------|----------|
|                        | Mean                                      | SD    | Mean                              | SD    |          |
| Personality issues     | 63.4                                      | 22.83 | 73.9                              | 18.38 | <0.001   |
| Sexual relationship    | 82.4                                      | 20.15 | 87.3                              | 15.77 | 0.016    |
| Children and parenting | 73.4                                      | 19.82 | 77.8                              | 13.57 | 0.019    |
| Family and friends     | 72.3                                      | 20.53 | 76.3                              | 17.69 | 0.061    |
| Egalitarian roles      | 62.6                                      | 17.56 | 74.0                              | 13.56 | <0.001   |
| Conception of life     | 63.0                                      | 17.73 | 70.2                              | 11.00 | <0.001   |
| Communication          | 71.3                                      | 23.45 | 81.5                              | 18.89 | <0.001   |
| Conflict resolution    | 56.1                                      | 22.71 | 65.8                              | 20.75 | <0.001   |
| Financial Management   | 67.0                                      | 21.19 | 74.1                              | 18.65 | 0.002    |
| Leisure activities     | 55.4                                      | 23.28 | 68.2                              | 20.78 | <0.001   |

\*P-value from t-test comparing scores between heterosexual and lesbian recipient couples.

## Positive couple agreement

When analysing the Positive Couple Agreement (PCA), the lesbian couples' were significantly higher in consensus about how they rated their relationship than were heterosexual couples. All subscales except for Family and Friends revealed differences in comparison between the two groups (Table IV).

The couples' agreement was lower in lesbian women with previous children (Supplementary data, Table S1). The treated lesbian women's agreement regarding relationship quality was affected by previous children on the subscales—Sexual relationship ( $P = 0.014$ ), Children ( $P = 0.028$ ), Egalitarian ( $P = 0.033$ ) and Financial ( $P = 0.001$ ). The consensus of lesbian partners with previous children in rating relationship quality had correlations in the subscales—Family and Friends ( $P = 0.005$ ), Leisure ( $P = 0.006$ ) and Conflict resolution ( $P = 0.004$ ).

Furthermore, amongst the lesbian couples the negative correlation decreased stepwise depending on the nature on the child relationship with the partner, with the least negative impact for biological children, more negative for adoptive children and the most negative impact for stepchildren (Supplementary data, Table S1).

Among the heterosexual couples with previous children, no differences were found, however, when dichotomizing the child variable into no previous children/previous children, the women revealed a higher consensus in relationship quality than the heterosexual women without previous children on the subscale Children and parenting ( $P = 0.016$ ).

Educational level had a positive effect within the lesbian partners' ratings concerning the issues of Family and Friends; the higher educational level the higher agreement of family aspects within the

relationship ( $P < 0.001$ ). In the heterosexual group, a higher educational level increased men's rating concerning Egalitarian roles ( $P = 0.043$ ).

A known donor had no impact in lesbian couples' agreement in any of the subscales (Supplementary data, Table S1).

Again, the MANOVA presented results similar to the regression analyses with the addition of a significant group difference between the heterosexual couples and the lesbian couples for the subscales Personality, Financial and Total ( $P < 0.05$ ).

## Discussion

The main findings in this study were the high satisfaction with relationship quality reported by the lesbian couples, and moreover that the lesbian couples reported higher satisfaction than the heterosexual couples.

Another finding was the impact of having previous children on the perceived relationship quality in couples starting sperm donation treatment. In several of the subscales lesbian women with previous children assessed relationship quality lower than did lesbian women without previous children, whereas heterosexual women, in the subscale 'Children and parenting', considered that having previous children affected relationship satisfaction positively. Furthermore, in heterosexual men previous children did not affect relationship satisfaction in any way. Although the stresses of parenting can impact on relationship quality (Kurdek, 2008), the effect of parental stress seems to differ between the couples.

Perhaps the results from the logistic regression analysis, where stepchildren and adoptive children had the most negative impact on relationship satisfaction, can be explained as an expression of the fact that most of the previous children in lesbian couples were not mutual and that the stress of parenthood is greater in families with stepchildren. Moreover, considering previous childlessness and infertility treatment, perhaps the heterosexual women's higher scores in PCA express the joy and gratefulness of having children.

Amongst the lesbian couples there were 26 children of the treated women and 29 of their partners (Table I). Since we did not directly ask about the child relationship, we can only assume that the treated lesbian women had 5 mutual children together with their current partner, the 15 step children are the biological children of lesbian partners and the 6 adoptive children of the treated lesbian women can also be the biological children of their partner. If this is right it means that the two stepchildren of lesbian partners can be stepchildren from a previous relationship. We could also assume that the 21 children of the heterosexual couples were mutual children (see Table I). However, seeing that the data on previous children are ambiguous, interpretation has to be made with caution.

To form a family and to have a child is to most couples a strong driving force in the relationship, a life event that deepens the relationship and attachment in the couple (Drosdzol and Skrzypulec, 2009; Riskind and Patterson, 2010). The couples in the present study expressed high satisfaction with their relationship, lesbian couples somewhat higher than heterosexual couples. It has been proposed that relationship satisfaction is associated with idealistic, rather than realistic, perceptions of one's partner (Murray et al., 1996); this could be an area for further research.

In the review of close relationships in lesbians and gay men, it was also evident that lesbian women have often experienced discrimination and social stigma in being homosexual (Peplau and Fingerhut, 2006) and lesbians may have struggled hard to form a working long-term relationship. Research with heterosexual couples has demonstrated that high levels of stress from sources outside a relationship are associated with lower relationship satisfaction and decline in satisfaction over time (Peplau and Fingerhut, 2006). Furthermore, during times of high stress, married couples report experiencing more marital problems (Peplau and Fingerhut, 2006). Lesbian couples have a clear and growing presence in Swedish society, perhaps resulting from the legal right to get married as well as from the legislation about lesbian couples right to assisted reproduction. Several factors make it difficult to provide an accurate estimate of the number of woman in lesbian relationships as well as lesbian families living with children, and currently we do not have enough information from lesbian women if and how social stigma and discrimination affect their relationships.

Donation treatment in Swedish hospitals demands a stable relationship (SOSFS 2005: 17) and to lesbian women donation treatment is an easily accessible solution to the forming of a family; hence, the lesbian women's positive rating of relationship satisfaction may be an expression of eagerness to be suitable as donor recipients. Heterosexual couples' lower assessment, on the other hand, could be an expression of how infertility investigations and treatments is a wearing factor in relationship satisfaction.

Analysis of correlations with educational level revealed interesting findings. It seems as if educational level affects important areas of communication (sexual relationship, conflict resolution and communication). Also, in the PCA results we could see how lesbian partners with higher education assessed the quality of family life as high.

Communication is important in all close relationships. Partnered lesbians have shown a high level of expressiveness; a skill that seems positively related to relationship conflict resolution (Kurdek, 1988; Gottman et al., 2003). Kurdek (1998, 2008) also theorizes about the way in which expressiveness exerts its positive influence on relationship satisfaction by motivating partners to engage in affectionate behaviour, therefore the relationships of lesbian partners might benefit from a 'double dose' of a relatively high level of expressiveness.

Within heterosexual men, higher educational levels result in a more positive attitude towards egalitarian roles. Johnsson (2003) stated that gender stereotyped roles are bad for relationship stability and satisfaction. Equal sharing of power has been found to contribute to relationship success and satisfaction for both women and men (Steil, 1997; Gottman and Silver, 1999).

In this study only eight lesbian couples (4.8%) reported that they knew the sperm donor, and we did not found any impact of a known donor on relationship quality. In Sweden, when undertaking a donation treatment, both the lesbian women will have full legal parental rights and obligations and we suppose this is the reason for the small number of women using a known sperm donor; there is no point for lesbians to choose a known donor since they will not have any parental expectations on the donor. Both the lesbian women are at the time of starting donation treatment legal parents and one can assume this is what they probably want when planning their family construction. Further studies will describe family life in lesbian families and how relationship and parenthood in lesbian couples with children conceived by donated sperm will develop.

## Strength and limitations

The main strength of the present study is the large population-based sample, including all fertility clinics performing gamete donation in Sweden. Distinct inclusion criteria and high response rates contribute to the external validity. However, no information is available about the couples that chose not to participate in the present study, and it is possible that they have a different view of the studied variables.

In the present study, lesbian women who had previous children rated their relationship quality as lower than did lesbian women without previous children, a finding that raises further questions as to whether these children were from previous or the present relationship. Some may have left a heterosexual relationship to form a homosexual relationship; others perhaps have always been in same-sex relationships. Perhaps the welfare of previous children is paramount to biological mothers in regards to relationship quality (Lewin, 1993; Lott-Whitehead and Tully, 1993).

A limitation of the present study is the incomplete information about the previous children (Table I). In the questionnaire we asked, 'Do you have children?'. The alternatives were 'No', 'Yes, biological children', 'Yes, adoptive children', 'Yes, stepchildren'. We also asked the participants to state how many of each category of children. Unfortunately we did not ask how the previous children were related to the participants. Since the major finding in this study was the impact of previous children on relationship satisfaction in lesbian couples we have to interpret findings in this study with caution.

In this study several variables were analysed and multiple analyses increase the chance of type I errors (incorrect attribution of statistical significance). One solution to this is to apply the Bonferroni correction by multiplying the 'P' value by the number of comparisons. If this were applied to the data in Tables II and III which each contain 10 comparisons (excluding the total), only differences in 'Financial management' between the untreated partner and 'communication' between the treated partners would change from appearing statistically significant to not. In the case of the linear regression analyses the Manova analysis demonstrated a significant overall effect which increases confidence that the individual associations found are real.

Other strengths are the use of the Enrich Inventory which has been shown to have satisfactory validity and reliability in profoundly assessing dimensions in relationship quality, and the fact that the questionnaires were completed individually and not by the couples together.

## Conclusion

In this first Swedish sample of lesbian couples' relationships, we found them generally well adjusted and stable in their relationships when starting ART, as were the heterosexual couples. However, having children from a previous relationship seems to negatively influence the present relationship among lesbians, which was not the case for heterosexual couples. A very small number of the lesbian women knew the donor prior to the treatment; however, no significant effect of a known donor was revealed in the women's assessment on the subscales.

## Supplementary data

Supplementary data are available at <http://humrep.oxfordjournals.org/>.

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## Authors' role

C.L., A.S.S. and G.S. planned and designed the study. C.L., A.S.S., G.S. contributed to the acquisition of data. C.B., A.S.S and G.S analysed the data and C.B. and A.S.S were primarily responsible for writing the paper. All authors were involved in drafting/revising of the paper and approved the final version of the manuscript for submission.

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## Conflict of interest

None declared.

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